

ABSTRACT

This invention relates to a metal part and other surface modification method suitable for the machining industry in which shot peening is typically used to refine the surface of a metal part (to introduce compressive residual stresses, to enhance fatigue strength, to harden the workpiece) and for fields in which parts need be cleaned. According to the present invention, workpiece W is placed within a first vessel which is filled with a fluid. The first vessel is pressurized by controlling the flow rate of the fluid flowing in the first vessel from nozzle 4 distant from said workpiece on the surface and of the fluid flowing from first vessel. Thus, the collapsing impact force of cavitation bubbles is increased so that the machined part will have its surface strengthened and cleaned by applying a peening effect to the surface of the part with said impact force.